REMARKS

Claims 11- 18 are pending and stand rejected.

35 U.S.C. §112,

Claims 11-18 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner states that the original specification fails to provide support for "alcohol-containing fuels" per the new claims, and therefore regards this language as new matter. Applicant points to page 3, lines 7-11 of the original Specification, in which it is stated that the "polyamide/polyolefin blends containing carbon nanotubes form a much greater barrier to alcohol-containing fuels than polyamide/polyolefin blends not containing carbon nanotubes". It is believed this section provides sufficient support of the phase "alcohol-containing fuels".

Claims 15-18 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically:

1. In claim 15, last line "8" is not understood. Applicant has deleted the extraneous "8".
2. In claim 17 and 18, the "tie" layers are indefinite as to scope and meaning. Claim 17 was amended to claim a "tie layer" rather than the previous translation from the French which was awkward. The tie layers of the invention are well defined in the original Specification beginning on page 25, line 19 - to page 29, line 16. the general definition of a tie layer is provided, along with many examples, as to be definite to one of ordinary skill in the art.
3. In claim 17, it is unclear as to whether or not the "a" polyamide/polyolefin blend forming inner layer (4) refers to "the" polyamide/polyolefin blend per claim 11. Applicant has amended claim 17 to use the term "said" making it clear that the polyamide/polyolefin blend forming inner layer (4) refers to "the" polyamide/polyolefin blend per claim 11.

4. In claim 18, the metes and bounds of the polyamide "(A1)" making up layer (4a) are indeterminate in scope. The "polyamide" of claim 18 (A1) is any polyamide – as long as it does not contain carbon nanotubes – while layer 5 does contain the carbon nanotubes. Claim 18 was amended to make it more clear that layer (4a), whether a polyamde (A1) or a polyamide/polyolefin blend having a polyamide matrix, does not contain carbon nanotubes.
5. Claim 18 is indefinite for its dependence upon cancelled claims 1 to 5. Claim 18 has been amended to depend from claim 11.

Response to the Examiner's Comments on Applicant's previous Arguments:

The Examiner characterizes Applicant's currently claimed process as nothing more than exposing a structure having at least one layer of the claimed polyamide/polyolefin blend to a fuel – and does not serve to patentable distinguish the claimed process from that of Jadamus et al. The Examiner characterizes Applicant's claims as tantamount only to finding a property of an old composition.

Applicant respectfully disagrees. Applicants have found that the proper blend of polyamide, polyolefin and carbon nanotubes can be used as a layer of a multi-layer tube to impart barrier properties to alcohol-containing fuels. The citation to a fuel leakage test in Table one of the Jadamus reference is related to leakage at a Quick Connector, not to the seepage of the fuel through the multi-layer fuel line itself.

Further, the Jadamus Examples all include a barrier layer – which is not surprising as Jadamus teaches the importance of a barrier layer (col. 2, lines 13-17) as an intermediate layer, and describes useful barrier layers (Col. 5, lines 1-8). In all but one of the Jadamus examples, barrier layers are a part of the construction – and in Example 5 (no barrier layer) the fuel leakage was not measured – only the impact resistance and the surface electrical resistance – which is the reason for the carbon fibers. There is no teaching or suggestion in the Jadamus reference to use a combination of a blend having a polyamide matrix and a polyolefin with carbon nanotubes to act as a barrier layer for an alcohol-containing fuel.

35 U.S.C. §103(a)

Jadamus in view of Nakajima and Chacko

Claims 11-18 stand rejected under 35 U.S.C. 103(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Jadamus et al et al, US 6,090,459, in view of Nakajima (US 5,376,712) and further in view of Chacko (US 6,617,377).

The '459 reference fails to teach all of Applicant's claim limitations, and therefore fails to present a *prima facie* of obviousness. Specifically, the '459 reference fails to teach the use of apolyamide/polyolefin blend having carbon nanotubes for use as a barrier layer for alcohol-containing fuels.

The '459 reference discloses the use of carbon nanotubes in an electrically conductive inner polyamide layer of a multi-layer plastic pipe. There is no disclosure in the '459 reference that would teach or suggest a method for improving barrier properties to alcohol-containing fuels, as invented by Applicant.

The '459 reference teaches away from the use of a polyamide/polyolefin/carbon nanotube layer as an alcohol-fuel barrier layer, by teaching the use of an additional barrier layer (Col. 2, line 14-18) to serve as a fuel component barrier layer. Since the use of a polyamide/polyolefin/carbon nanotube layer was not recognized as a result-effective variable as a barrier layer, it cannot be optimized by routine experimentation (MPEP 2144.05).

Further, impact modification is optional in the '459 patent (Col. 3, line 9) and if used could be of a large wash list of materials covering the known impact modifiers for thermoplastics, including copolymers and core-shell polymers. The proportions for use of the impact modifier are not even taught by the '459 reference. The '459 reference teaches a method for providing electrical conductivity to a plastic pipe. There is no teaching or suggestion of choosing a specific set of compositions in order to provide the alcohol-fuel barrier property improvement claimed by Applicant.

Neither the Nakajima or Chacko references describe any barrier layer properties of carbon-nanotube containing plastics, and therefore fail to heal the defects in the '459 reference to teach or disclose all of Applicant's claim limitations

Since the cited references fail to present a *prima facie* case of anticipation orobviousness over the claims as amended, Applicant believes that the reasons for rejection have been overcome, and the claims herein should be allowable to the Applicant. Accordingly, reconsideration and allowance are requested.

Respectfully submitted,

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